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Sample Impervious Surface Zoning Bylaw

(Based on a bylaw developed by the Town of Mashpee)

Massachusetts Wellhead Protection Regulation 310 CMR 22.21(2) (b)(7) requires municipalities to adopt an impervious surface control in approved Zone II recharge areas of public wells. The regulation prohibits *'land uses that result in the rendering impervious of more than 15% or 2,500 square feet of any lot, whichever is greater, unless a system for artificial recharge of precipitation is provided that will not result in the degradation of groundwater quality'*. Due to the difficulty in implementing this regulation, many communities have contacted the DEP for examples of how other towns are addressing the impervious surface requirement.

The Town of Mashpee amended their Groundwater Protection District Zoning Bylaw to include additional specifications to their impervious surface bylaw. The amended language expands on the state language by specifying and detailing the method, standards, and best management practices required for artificial recharge that will not result in the degradation of groundwater quality. The following explanation for the proposed amendment was included in Article 34 of Mashpee's Groundwater Protection District Zoning Bylaw:

> *The Town's current Groundwater Protection District Zoning Bylaw contains a fairly vague and difficult to implement standard for artificial recharge of stormwater for properties with impervious lot coverage in excess of 15% ("a system for artificial recharge..... that will not result in the degradation of water quality") that was suggested by model regulations developed by the state in the late 80s. The state's Department of Environmental Management and the Massachusetts Coastal Zone Management Office, with assistance from the Pioneer Valley Planning Commission, have recently developed more specific standards and guidelines for stormwater management and artificial recharge, along with a model ordinance language for infiltration practices. This proposed amendment is based on the suggested model ordinance language. It specifies use of the "Best Management Practices" contained in the state's recently published Stormwater Management Handbook which provides some level of nitrogen removal, are appropriate for our soils and will minimize the impact of any hazardous materials spills on our waters as the basis on which applicants and Town boards will determine whether the bylaw's standards on degradation of groundwater quality has been met. The state's Handbook is also referenced as the source of technical standards for development of those best management practices.*

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Refer to MassDEP's Model Groundwater Protection District Bylaw for model language on Purpose, *Scope*, *Definitions*, *Delineation*, *Permitted Uses*, and other *Prohibited Uses* in the protection district. The Model is available by contacting MassDEP at 617-292-5770, or by visiting the MassDEP Website at www.mass.gov/dep.

1. Purpose of Bylaw
2. Scope of Authority
3. Definitions
4. Delineation of District
5. Permitted Uses
6. Prohibited Uses

The rendering impervious of greater than fifteen percent (15%) or two thousand five hundred (2,500) square feet of any lot, *whichever is greater*, unless a system of storm water management and artificial recharge of precipitation is developed which is designed to prevent untreated discharges to wetland and surface water; preserve hydrologic conditions that closely resemble pre-development conditions; reduce or prevent flooding by managing peak discharges and volumes of runoff; minimize erosion and sedimentation; not result in significant degradation of groundwater; reduce suspended solids and other pollutants to improve water quality and provide increased protection of sensitive natural resources.

These standards may be met using the following or similar best management practices:

(1) For lots occupied, or proposed to be occupied, by single or two family residences recharge shall be attained through site design that incorporates natural drainage patterns and vegetation in order to maintain pre-development stormwater patterns and water quality to the greatest extent possible. Stormwater runoff from rooftops, driveways and other impervious surfaces shall be routed through grassed water quality swales, as sheet flow over lawn areas or to constructed stormwater wetlands, sand filters, organic filters and/or similar systems capable of removing nitrogen from stormwater.

(2) For lots occupied, or proposed to be occupied by other uses a stormwater management plan shall be developed which provides for the artificial recharge of precipitation to groundwater through site design that incorporates natural drainage patterns and vegetation and through the use of constructed (stormwater) wetlands, wet (detention) ponds, water quality swales, sand filters, organic filters or similar site appropriate best management practices capable of removing nitrogen and other contaminants from stormwater and meeting the Stormwater Management Standards and technical guidance contained in the Massachusetts Department of Environmental Protection's Stormwater Management Handbook, Volumes 1 and 2, dated March 1997,

for the type of use proposed and the soil types present on the site. Such runoff shall not be discharged directly to rivers, streams, and other surface water bodies, wetlands or vernal pools. Dry wells shall be prohibited.

Except when used for roof runoff from non galvanized roofs, all such wetlands, ponds, swales or other infiltration facilities shall be preceded by oil, grease and sediment traps or other best management practices to facilitate control of hazardous materials spills and removal of contamination and to avoid sedimentation of treatment and leaching facilities. All such artificial recharge systems shall be maintained in full working order by the owner(s) under the provisions of an operations and maintenance plan approved by the permitting authority to ensure that systems function as designed. Infiltration systems greater than three (3) feet deep shall be located at least one hundred (100) feet from drinking water wells. Any infiltration basins or trenches shall be constructed with a three (3) foot minimum separation between the bottom of the structure and maximum groundwater elevation.

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* The language of this zoning bylaw can be adapted for adoption as a general bylaw, ordinance, or board of health regulation.